

Name _____

Competition Lab

Introduction

This simple lab exercise is designed to get you thinking about competition and how it affects the number of prey captured by predators. Few predators live in isolation; there will almost always be other predators of the same or different species competing for the same food source. As these predators search for prey, they will interfere with each other, which will affect the number of prey that each individual predator captures.

Data

- **Calculate** the total number of prey captured by adding the totals in each row from Table 1 and record in Table 2
- **Calculate** the average number of prey captured by dividing the total # of prey by the # of predators and record in Table 2 (round to the nearest whole number)

Graphs

- On Graph A, make a **bar graph** illustrating the effect of predator density on the total number of prey captured.
- On Graph B, make a **bar graph** illustrating the effect of predator density on the average number of prey captured.
- On both graphs, be sure to:
 - Label your axes
 - Number your scales with equal intervals
 - Include a title for each graph
 - Neatly draw the bars of your graph using the grids as a guide based on your data

Analysis

Describe the trends you noticed in the lab by completing the provided statements.

Conclusion

Using your notes and what you learned from the lab, **explain how competition affects an ecosystem**. Be sure to use answer all parts of the question in complete sentences using the prompts provided.

# of Predators	# of Prey				
1	100				
2	90		95		
3	80	85		83	
4	75	70	72	79	
5	65	58	63	61	57

Table 1: The number of prey captured by each predator as the number of predators increased by one. This data can be more accurately evaluated by analyzing Table 2.

# of Predators	Total # of Prey	Average # of Prey
1		
2		
3		
4		
5		

Table 2: The total number of prey captured by the predators compared to the average number of prey captured as the number of predators increases.

Analysis

Describe the trends you noticed in the lab by completing the following statements:

- As more predators compete, the TOTAL number of prey captured _____.
- As more predators complete, the AVERAGE number of prey captured _____.

Conclusion

Using your notes and what you learned from the lab, **explain how competition affects an ecosystem**. Use complete sentences. Address the following in your explanation:

- Does anyone benefit from the relationship?
- What are the alternatives to direct competition? (hint: there are 3)
- Give examples of birds in nature that avoid competition with each other AND explain how their beaks allow them to do so.
- Which is better in an ecosystem, similar or diverse species and WHY?